

Tracking performance criteria

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Goals

We already have fairly well established criteria for momentum resolution.

We would like to settle on criteria for adequate pattern recognition performance that could be applied to all of our tracking options.

We have to fold into these criteria the efficiency for tracking for all tracking options - better pattern recognition may imply lower efficiency.

Ultimately, these criteria will determine the minimum required physical configuration of each proposed tracking (inner + outer) combination.

Some examples of questions to be addressed using these criteria

Can we match TPC tracks to inner tracker tracks without adding an intermediate layer?

Do we need to add additional layers to the silicon tracker?
(may depend on which inner tracker we assume).

Efficiency for realistic tracker dead areas?

Decisions to be made

Central Hijing Au+Au events (0-4 fm impact parameter)?

Au+Au collision rates up to 100 kHz?

Do we take credit for matching to calorimeters?

Need (preferably physics based) criteria for (and these are related):

- Tracking efficiency at low, intermediate and high momentum
- Fake rate at intermediate and high momentum
 - With calorimeter matching
 - Without calorimeter matching (?)

What did I forget?